REMARKS

The application has been amended so as to be in condition for allowance at the time of the next Official Action.

The case was originally filed with claims 1-17. This amendment adds new claims 18-55, claims 19 and 21 being independent. See that claims 24-39 and claims 40-55 correspond to claims 2-17 but depend from claims 19 and 21.

There are no formal matters outstanding.

Claims 1-17 stand rejected as obvious over HASHIZUME et al. 5,496,421.

Claims 3-4, 7, 10-11, and 14-15 stand rejected as being obvious over HASHIZUME et al. in view of FUJITA et al. 6,123,897.

Claim 1 originally recited the inventive steel with a % by mass basis of Nb being from about 10 × (C + N) to about 1.00%. This has been amended to the preferred range of at least 0.3%. New claim 18 recites the preferred range of about 0.30% to about 0.70%.

Claims 19-20 correspond to claims 1 and 18, further reciting that the steel has a ferrite single phase structure.

Claims 21-23 recite the inventive steel as an automobile exhaust system component, specifically an outer casing for a catalytic converter, and an exhaust pipe. See at least page 1 of the specification.

Support for these range recitations are found in the originally-filed specification in the paragraph spanning pages 13-14, reproduced below.

> Nb is an element having such functions as fixing C and N, and improving the high-temperature strength, formability, corrosion resistance, and the intergranular corrosion resistance of welded portions, and these effects are exhibited when the Nb content is 10 × (C + N) or more. On the other hand, when the content is 1.00% or more, large amounts of the Laves phase precipitate so as to increase the room-temperature strength and degrade the toughness and the surface properties. Therefore, the Nb content was limited to from about 10 × (C + N) to about 1.00%. In the case where especially superior high-temperature strength is required, the Nb content is preferably specified to be more than 0.30%. More preferably, it is from about 0.30% to about 0.70%.

Although ferrite structure is not explicitly set forth in the specification, such a structure is fairly disclosed to those of skill in the art. All elements such as low C; low N (austenite forming element); from 12.0 to 16.0% Cr (ferrite forming element); more than 0.8 and less than 3.0% Mo (ferrite forming element); low Ni (0.05 to less than 1.00% (austenite forming element) plus Nb (ferrite forming element) which kills C and N; are added. It is clear that the steel of the present application is of a ferrite single phase structure.

The steel of the applied references is different in composition and nature than that of the present invention, recited in the presently pending claims.

Neither of the applied references teach a ferrite structure. Rather, both of the applied references teach a Martensite structure. As to FUJITA et al. (Reference B), see Table 20, 0% ferrite (consequently summarized as a Martensite structure).

Neither of the references have the recited Nb range. HASHIZUME et al. teach 0.01% - 0.1%; and FUJITA et al. teach 0.03% - 0.06%. Both of these are well below the recited lower limit of about 0.30%.

Note that these steels are different in state when is use. HASHIZUME et al. teach steel heat treated after hot processing. FUJITA et al. teach heat treated after casting. The present invention is YS at room temperature: around 30 $kg/mm^2$ providing a ferrite structure of soft quality and high workability.

Note further that these steels are related to different technical fields.

HASHIZUME et al. are for drilling and transportation of oil and natural gas where there is no vigorous bending or press forming, as well as a field where Martensite series high strength stainless steel is desired.

FUJITA et al. are a heat resistant steel for heat resistant and high pressure applications such as a pressure vessel of a thermal power plant.

The present invention is applied to exhaust system members of automobiles. This inventive steel is subject to bending and expansion when in pipe form and press forming when in sheet form giving rise to the sheet or pipe stainless steel of a soft ferrite structure.

The steels being reviewed are intended for different temperature when in use.

HASHIZUME et al. are for a 200°C environment of carbon oxide gas corrosion. FUJITA et al. are for a 625°C steam environment. Whereas, the present invention during processing is at room temperature; and when in use, is exposed to temperatures of 900°C.

In view of the above, it is clear that the presently recited steel and recited products made from this steel are both novel and non-obvious over the steel of the prior art. Accordingly, reconsideration and allowance of all the pending claims are respectfully requested.

Applicants believe that the present application is in condition for allowance and an early indication of the same is respectfully requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Please charge the fee of $630 for the 35 extra claims of any type added herewith, to Deposit Account No. 25-0120.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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